

We claim:

1. A method of food and insulin dose management for a diabetic subject, comprising:
  - c) providing an intended insulin unit value or an intended carbohydrate unit value representing the amount of insulin or carbohydrate intended for intake by the subject;
  - d) determining the balance value of either insulin units or carbohydrate units needed to balance with the provided unit value and maintain blood sugar in the subject in a target blood sugar range.
2. The method of claim 1, wherein the intended carbohydrate unit value comprises an intended food unit value
3. The method of claim 2, wherein the balance value is calculated by determining for the subject a starting blood sugar value and comparing sugar metabolism resulting from the provided unit value with sugar metabolism resulting from the insulin units or food units and thereby calculating the amount of insulin units or food units necessary to maintain blood sugar in the subject in a target blood sugar range.
4. The method of claim 3, wherein the sugar metabolism resulting from the provided unit value and sugar metabolism resulting from the insulin units or food units are determined individually for a subject from the amount of sugar and rate of release of sugar in food in the subject and the amount of sugar and rate of removal of sugar by insulin in the subject.
5. The method of claim 4, wherein the method is performed by or directed by the subject.
6. The method of claim 2, wherein the subject provides an intended food unit value and the method further comprises,
  - a) determining a starting blood sugar value in the subject;
  - b) determining from the food unit value i) a total sugar release value and ii) a sugar release rate value;
  - c) determining the balance value by determining an effective amount of insulin, insulin analog or insulin mimetic to administer to the subject to balance with the values in b) so that an ending blood sugar value in the subject is in a target blood sugar range.
7. The method of claim 2, further comprising i) the subject receiving food in accordance with the intended standard food unit value and ii) the subject receiving insulin, insulin

analog or insulin mimetic containing a number of insulin units in accordance with the balance value.

8. The method of claim 2, wherein the subject provides an intended insulin unit value and the method further comprises,

- 5                   a) determining a starting blood sugar value in the subject;
- b) determining from the insulin unit value i) a total sugar removal value to be removed from the blood of the subject and ii) a sugar removal rate value;
- c) determining the balance value by determining an effective amount of food units to be taken in by the subject to balance with the values in b) so that an
- 10                   ending blood sugar value in the subject is in a target blood sugar range.

9. The method of claim 2, further comprising i) the subject receiving the insulin, insulin analog or insulin mimetic in accordance with the intended insulin unit value and ii) the subject receiving food containing a number of food units in accordance with the balance value.

15           10. The method of claim 1, wherein the carbohydrate unit comprises about 16 g of carbohydrate.

11. The method of claim 1, wherein the food unit comprises toast or bread including about 16 g of carbohydrate.

20           12. The method of claim 2, wherein i) the subject provides a time schedule for periodic, divided intake of the intended insulin unit value or the intended standard food unit value and ii) the balance value is determined according to a time schedule for the subject to intake insulin units or food units needed to balance with the provided unit value and maintain blood sugar in the subject in the target blood sugar range during the time schedule.

25           13. The method of claim 2, further comprising determining whether the subject did intake the intended food and insulin according to the time schedule and, if the subject did not intake the intended food and insulin, then adjusting the ending blood sugar value.

14. The method of claim 13, further comprising increasing or decreasing future insulin units or food units so that the ending blood sugar value is in a target blood sugar range.

30           15. The method of claim 13, wherein if the subject did intake the intended food and insulin according to the time schedule and there is over a 25 point difference between the ending blood sugar value and the actual blood sugar value, then increasing or decreasing future insulin units or food units so that the ending blood sugar value is in a target blood sugar range.

16. The method of claim 6, further comprising repeating steps a)-c), wherein the starting blood sugar value in repeated step a) is i) determined by using the ending blood sugar level value determined in the prior step c) as the starting blood sugar value or ii) determined by measuring a subject blood sugar.

5 17. The method of claim 16 further comprising determining the difference in actual subject blood sugar value and ending blood sugar values at a plurality of time intervals.

18. The method of claim 6, further comprising:

a) entering the starting blood sugar value in a timetable

10 b) determining the amount of carbohydrate to be ingested as food units and entering the number of food units in the timetable;

c) determining the total amount of sugar in the food units and the sugar release rate value per unit of time and entering in the timetable the total amount of sugar and the sugar release rate value per unit of time;

15 d) determining the balance value as the number of balancing insulin units to be administered to the subject to balance the total amount of sugar in the carbohydrate units and entering the number of insulin units in the timetable;

e) determining the total sugar removal value and entering the value in the timetable;

20 f) determining the sugar removal rate value per unit of time after administration of insulin, insulin analog or insulin mimetic and entering the sugar reduction rate value per unit of time in the timetable;

f) determining an ending blood sugar value for each unit of time and inserting the ending blood sugar value as the starting sugar value for the following unit of time.

25 19. The method of claim 8, further comprising:

a) entering the starting blood sugar value in a timetable

b) determining the amount of insulin, insulin analog or insulin mimetic to be ingested as insulin units and entering the number of insulin units in the timetable;

30 c) determining the total sugar removal value to be caused by the insulin units and the sugar removal rate value per unit of time and entering in the timetable the total sugar removal value and the sugar removal rate value per unit of time;

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- d) determining the balance value as the number of balancing food units to be administered to the subject to balance the total amount of sugar removed by the insulin units and entering the number of food units in the timetable;
  - e) determining the total sugar release value and entering the value in the timetable;
  - f) determining the sugar release rate value per unit of time after intake of food units and entering the sugar release rate value per unit of time in the timetable;
  - 10 g) determining an ending blood sugar value for each unit of time and inserting the ending blood sugar value as the starting sugar value for the following unit of time.
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20. The method of claim 19 wherein the timetable comprises a matrix, with one axis of the matrix having fields representing units of time and the other axis of the matrix having a plurality of fields with a field representing units selected from the group consisting of starting sugar, carbohydrate units, sugar release per unit of time, insulin units, sugar reduction value per unit of time and ending blood sugar.